

## INDEX OF SURGICAL PROGRESS.

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### General Surgery.

1. TUBERCULOUS TENDOVAGINITIS. By Dr. A. BEGER (of Hamburg). Tuberculous disease of the sheaths of tendons being the subject of very few publications in Germany (the greater part having been made by French authors), and the surgical text-books containing but scanty information on the subject, the author publishes four cases, observed by him in the Leipsic university clinic as assistant to Prof. Thiersch.

The first is that of a laborer, 45 years of age, who presented a tumor, 6 centimètres in diameter and 2 cm. in height, just above the wrist on the inside of the forearm, and situated beneath the superficial tendons and under the ulnar artery, adhering neither to the bones nor to the skin. There was a slight swelling in the palm of the hand, but none on the dorsal aspect. It had commenced five years before, in the same place, as a soft tumor, and had considerably impaired the power of his movements; three years later the fingers had become fixed; for nine months he had been unable to work. He had been "scrofulous" in his youth; his family, however, was quite healthy. The tumor had been once punctured. On 6th May, 1881, a longitudinal incision was made, disclosing tuberculous growths about the tendons, and continuing down to the palm, where another incision was made. The masses were scraped out, and antiseptic dressings applied. A free purulent, inodorous discharge subsequently set in; the patient's strength failed, and a number of abscesses formed. June 25th, the arm was amputated at the middle of the humerus, the wound healing by first intention, and a month later the patient was dismissed in good health.

The tendons were found enveloped in tuberculous growths, some being sequestered, some transformed into tuberculous masses. The seat of the disease was in the common carpal sheath of the flexors. The first attempt at tapping had set up inflammation, which was increased by the incomplete évitement.

The second case was that of a mechanic, 27 years of age, admitted for a deep-seated tumor, appearing at the volar aspect of the fourth finger, in the palm, and just above the wrist, and impairing the movements of the fingers. An incision was made, disclosing tuberculous disease of the tendon-sheath. A week later, amputation of the forearm was performed, the wound healing in eight days. Two months later he was dismissed with induration of the axillary lymphatic glands, refusing to have them taken out. Examination of the parts removed revealed tuberculosis of

the tendon-sheath of the finger, of the common carpal sheath, and of the synovial membrane of the wrist-joint.

The third case was a girl, 8 years old, who had complained of pain in her foot on walking, for three months. For one week a tumor, about 2.5 cm. in diameter, had appeared below and in front of the external malleolus, red, and painful to the touch, but not impairing motion. An incision gave vent to pus, concealed in a cavity enclosing the tendon of the peroneus longus and lined with a tuberculous membrane. Iodoform dressings. Two months later the patient had completely recovered.

In the last case, a woman of 33, the back of the thumb had been swollen for many years; for three years a swelling had appeared on the back of the left hand, over the fourth metacarpal bone, fluctuating and elastic on pressure, and painless. Incision was made and the tumor removed, in which the microscope revealed tuberculous elements; 14 days later she was dismissed, with excellent motor function of the fourth finger. The thumb was not operated on.

Abstracting from these cases, the author considers tuberculous disease of the tendon-sheaths under the following heads:

- (1) Primary: (a) acute; (b) chronic; (A) non-suppurative; (B) suppurative.
- (2) Secondary: (a) non-suppurative; (b) suppurative.

Acute primary tuberculous tendosynovitis probably occurs with miliary tuberculosis. The tendon-sheath, being complete sacs, closed on all sides and possessing visceral and parietal walls, may become diseased either diffusely or circumscribedly. In the former case, the disease begins in a chronic manner, with a slight swelling, increasing only very slowly to a height of one or two centimeters in the course of two or four years, and causing increasing immobility; there is no sensitiveness on pressure, the swelling is soft to the touch, fluctuating. The skin is normal. There are no symptoms of inflammation. The tendon is enveloped, to a circumference of 1 cm., in a reddish-grey, soft, sarcomatous mass. The tendon itself is not affected. The lumen of the sheath is occluded.

The circumscribed form of the disease attacks especially the terminal openings of the sheaths, and occasions a sharply defined round swelling half the size of a walnut. Here the tuberculous masses present a confining capsule about them. There is some analogy with synovial tuberculosis; the course of the disease is chronic; there is considerable swelling; no pain; little impairment of function,—as long as the disease remains localized.

The course of the disease is the same in both these forms. If no interference is made, the capsule is ultimately perforated, the skin is destroyed; septic infection occurs; the growth, too, encroaches upon the tendon, penetrating between its fibres.

The tuberculous masses may suppurate, for instance, if massage has been resorted to. In this case perforation takes place into the joint, or into the surrounding tissues, or into a tendon-sheath, in which case the secondary suppurative tendovaginitis occurs.

It must still be considered an open question, whether suppurative tuberculous

tendo-synovitis may be primary. The secondary form is more frequent. The symptoms are less marked, as the trouble is caused by progressive invasion of the disease from the neighboring parts.

The diagnosis may be made in contradistinction to hygroma, ganglion, or cyst, by the help of probatory paracentesis; but malignant tumors and syphiloma can only be excluded after an incision.

The tendon-sheaths of the fingers are more frequently the seat of the primary, the pronal and extensor tendon-sheaths of the foot, of the secondary disease.

The disease may attack perfectly healthy individuals. Extirpation is possible without detriment to the tendon, as long as the sheath is imperforate, without fear of recurrence. But when long tendon-sheaths are extensively affected, and the tendon proper is pervaded by tubercular deposits, evident is of no more avail than in tuberculous joint-disease, etc., so that amputation may become indicated.

Conservative treatment is of doubtful efficacy. A diseased tendon-sheath should not be treated with massage, for fear of inducing suppuration.—*Deutsche Zeitschr. f. Chir.* 1884. Dec. 18. Bd. 21. Hft. 3 and 4.

W. VAN ARSDALE (New York).

II. THE SURGERY OF SCROFULOUS GLANDS. By T. PRIDGEN TEALE (Leeds). In a clinical lecture the author strongly advocates surgical interference in cases of scrofulous glands. His conclusions may be thus summarised: 'That gland cavities and sinuses can be healed by thorough scraping with Volkmann's or Lister's scoops. That the visible abscess has for its source, as a rule, a degenerate gland, under the deep cervical fascia, and sometimes even submuscular, the communication between the two being a small opening just large enough to admit a probe or director. That it is therefore futile simply to incise or puncture such a subcutaneous abscess. That sinuses should be enlarged and scraped, and all their blue skin and overhanging edges removed. That the gland should be sought for and eradicated. That where the gland has suppurated, and generally when it has become caseous, the capsule should be freely opened, and the contents should be eviscerated by the scraper. That the cavity should be cleaned with carbolic acid, 1 in 40, and then charged with iodoform. An india-rubber drainage tube should remain until there is reason to suppose that all is healed except the track of the tube. This period will vary from three to ten weeks.—*Med. Times.* 1885. Jan. 10.

WM. THOMSON (Dublin).

III. CASEOUS LYMPHATIC GLANDS AND THE IMPORTANCE OF THEIR EARLY REMOVAL. By GEO. R. FOWLER, M.D. After adverting to the still uncertain nature and pathology of tuberculosis, the author confines his remarks to clearly defining the necessity of establishing a prophylaxis against general tuberculosis by the early extirpation of caseous lymphatic glands. He therefore urges that what may appear to be an innocent caseous gland is really the site of material which rapidly becomes propagated, and constitutes the so-called caseous lymphadenitis. That this caseous

mass probably is the bearer of, or the soil proper for, the spore or germ upon which the anatomical product known as tubercle depends for its formation. That there is a varying period of quiescence, during which no advance of the disease occurs, but during which the patient is continually threatened with general tuberculosis. That whenever such caseation is within reach of surgical art, early, complete and thorough removal should be practiced.—*New York Medical Journal*. 1885. Jan. 10. Vol. XLII. No. 2.

G. R. BUTLER (Brooklyn).

IV. EXPERIMENTAL RESEARCHES ON CICATRIZATION IN BLOOD VESSELS AFTER LIGATURE. By N. SENN, M. D. (Milwaukee). An exhaustive paper, including a consideration of the history of the ligature, the histology of the blood vessels, the various modifications of the ligature, in addition to a careful and critical collation of the literature on the immediate subject of the paper, as announced in its title. Details of fifty-four experiments upon animals, mostly sheep, then follow, concluding with a series of practical remarks and suggestions. The conclusions of the author are summarized as follows:

All operations on blood vessels should be done under antiseptic precautions.

The aseptic catgut ligature is the safest and most reliable agent in securing provisional and definitive closure of blood vessels.

A thrombus after ligature is an accidental formation which never undergoes organization, and takes no active part in the obliteration of a vessel.

The intravascular, or definitive cicatrix is the exclusive product of connective tissue and endothelial proliferation.

Permanent obliteration in arteries takes place in from four to seven days, in veins in from three to four days.

In ligating vessels in aseptic wounds the vessel sheath can be opened freely without compromising the integrity of the vessel tissues, and such procedure renders the operation safer and easier of execution.

The double aseptic catgut ligature should be preferred to the single ligature in ligating large arteries in their continuity near a collateral branch, and should always be employed in all operations of tying varicose veins in their continuity as the safest and most effective measure in producing definitive obliteration.—*Transac. Amer. Surg. Assoc.* Vol. II. 1884.

V. CASES OF HÆMOPHILIA. By DR. PAUL WAGNER (Leipsic). The author, formerly an assistant to Prof. Thiersch, publishes five cases of hæmophilia observed during the years 1877 to 1883 in the Leipsic University clinic. The first was that of a man, thirty-five years of age, who, though made aware of the danger incurred, insisted on the removal of an atheroma of the cheek, and who could not be dismissed from the hospital for thirty-nine days, during which period his life had been in extreme danger from continued loss of blood.

The second case was that of a student, twenty years of age, who had bled profusely twice before, once on having a tooth extracted five years previously, and again one year before on receiving a slight wound in a duel, and who, on the 24th November,

1881, received a sabre cut through the left cheek. Hæmorrhage stopped after twenty minutes on compression and application of sutures, but commenced again on the fifth day; the wound had not united on removing the sutures, and as repeated efforts and application of chloride of iron dressings proved useless, he was brought to the hospital on the 10th October. He at that time presented considerable anæmia; the wound had become septic by communication with the oral cavity; the margins were swollen and ecchymosed, and covered with offensive pus. The whole of the wound showed an oozing of blood, but no arterial hæmorrhage. Treatment with actual cautery (Paquelia) and iodoform dressing; a bunch of iodoform gauze being stuffed into the mouth. Hæmorrhage continued, however, till the afternoon, when iron chloride cotton was used for dressing. In the evening the hæmorrhage had stopped. The next day considerable swelling of the whole side of the face had set in, no further bleeding, however, occurred; the wound was cleansed on the 14th. The iodoform tampon in the mouth had done excellent service, and had been allowed to remain fifteen days. The patient was dismissed as cured 18th January.

Third case: A railway laborer, twenty-three years of age, of healthy family, who had previously bled profusely after slight injuries, was struck in the left hand by a fellow laborer during a quarrel with a knife—the point had broken off and could not be found. Hæmorrhage had occurred several times, and the fore-arm was swollen, red and painful. He was admitted to the hospital on 8th July, 1877, twelve days afterward, in a very anæmic condition. The wound, which was three centimetres in length, and situated on the radial aspect of the fore-arm, showed an oozing of bright-colored blood. The radial artery was found to be wounded. Incision was made, a double ligature applied, the artery severed between the two, and finally the broken point of the knife,  $1\frac{1}{2}$  cm. in length, extracted from the region of the triquetral and pisiform bones. The wound was thoroughly disinfected, a counter opening made, drainage tubing applied, and constant irrigation with salicylic solution kept up, salicylic cotton being used as dressing. During the following days the patient did well; the evening temperature, however, was  $39.0^{\circ}$  and  $39.4^{\circ}$  C., and the tumor increased and ascended. On the 14th a severe parenchymatous hæmorrhage occurred, which was met by application of chloride of iron wadding; on the 15th and 17th further hæmorrhages occurred. On the 18th chloride of zinc, one in two parts and actual cautery was resorted to. Temp.,  $39.1^{\circ}$  C. Pulse, 96. On the 19th epistaxis. On the 20th the sloughs began to loosen; renewed epistaxis. Ordered acid sulphuric Halleri. 21st: renewed hæmorrhage from wound. Ordered ergot. Actual cautery was found of no avail, as the bleeding continued through the eschar. On the 22nd great anæmia obtaining, the pulse being weak, 100, amputation of the upper arm was performed with all antiseptic precautions, digital compression of the axillary artery being made; no drainage tubes were used and elastic bandages applied. The patient, who had gone into a state of collapse during the operation, was sustained by excitants, and did well till the 26th, when the dressings became suffused with blood, and a rise of temperature to  $40.0^{\circ}$  C. set in.

Blood and fresh coagula were found between the flaps; the sutures were removed. Dressings with salicylic cotton. The stump could no longer be kept completely aseptic, oozing of blood continued; on the 28th vomiting and fainting, on the 29th renewed hæmorrhage occurred, till, on the 30th, death set in, the autopsy revealing only anæmia.

The fourth case is that of a  $5\frac{1}{2}$  years old boy, who had frequently bled very freely; his sister's child was said to be a bleeder. On the 19th May, 1883, a younger brother in play struck a nail perpendicularly through the child's tongue, whereupon a severe hæmorrhage set in, lasting several hours. After subsiding for one day, on application of vinegar and water, it began again on the 21st, when the child was admitted to the hospital in a state of great anæmia. The tongue was found to be perforated near the tip, but was not swollen. The oozing continued from the lower opening, and a ligature was here applied on the 23d in narcosis. On the 24th slight hæmorrhage from the upper aperture, and on the 25th from both occurred. Actual cautery. On the 26th renewed bleeding, on the 29th more profuse hæmorrhage, waxy pallor, pulse 130. 30th. Profuse bleeding at night. Cauterisation renewed. On 1st June, as loss of blood and strength continued, the whole tip of the tongue was ligated with a rubber cord, a silk ligature being passed through the frenulum. No further hæmorrhage occurred till the tip of the tongue had sloughed off on June 6th, when bleeding recommenced at night and continued on the 7th. Anæmic convulsions set in, with extreme frequency of pulse, and death occurred on the 8th. The post-mortem revealed fatty degeneration of the heart and anæmia of internal organs.

The last case refers to a tailor, aged twenty-one, who had lost two brothers by hæmorrhage, whose parents, however, as well as four other brothers and sisters, were healthy. The grandparents had likewise been healthy. He had suffered previously from epistaxis, and had sudden swellings of the joints with pain. He had been in the hospital for two weeks in September, 1880, with such an affection of the left ankle joint. At that time the right arm appeared flexed in the elbow and movement was impaired.

On August 9th, 1881, he was again admitted, sudden pain having come on in the right elbow and wrist; the right fore-arm appeared swollen, and the capsules of both these joints were extended by effusion. The fingers were flexed. The skin was not affected. Salicylic acid was given without effect. The temperature ranged to  $39^{\circ}$  C. Subsequently the skin became infiltrated, and the infiltration of the muscles extended all around the whole arm till the 8th September, when the skin was again normal, but the stiffness and induration of the parts continued. 3d October: Epistaxis. Massage commenced on right hand. 1st November: Bleeding from the gums. On 9th November a decayed tooth, which had caused the patient much suffering, was extracted at his desire, hæmorrhage continued for three hours, recurred on the following day, till cotton with chloride of iron was applied. The cheek became much swollen, and hæmorrhages continued till 17th November, occurring again on December 5th. On the 16th November the right knee swelled up, and was painful till the

20th, when the symptoms subsided. Epistaxis occurred once subsequently; but the patient improved steadily until his dismissal in February, 1882. He was again seen in January, 1883, when he was suffering from a similar infiltration of the left arm. The right arm remained impaired in function and movements.

The author quotes Grandidier, Immermann, König, and is himself of opinion that the joint affection is of the nature of a true hæmorrhage, and not merely a serous effusion, and refers to a case in the clinic of Göttingen where incision into such a joint was made, and the patient died from loss of blood.—*Deutsche Zeitsch. f. Chir.* 1884. Dec. 18. Bd. 21. Hft. 3 and 4.

W. VAN ARSDALE (New York).

VI. RECTAL ETHERIZATION. By DR. GEORGE A. PETERS (New York). In the course of remarks made upon certain cases of excision of the superior maxilla reported to the New York Surgical Society, December 23, 1884, the author describes a method of rectal etherization, with commendation. In his view the chief danger is either from over-distension of the bowels with ether vapor, or from the deposit of fluid ether in the gut, having been forced through the rubber tube, causing inflammation of the mucous membrane, with which it comes in contact, tenesmus and bloody discharges from the rectum. Experiments demonstrate that a cool rubber tube produces rapid condensation of the vapor driven through it. The amount or rapidity of condensation does not seem to depend either upon the length or caliber of the tube. Ether boils at temperature of 96° F. Theoretically it seems that if the vapor should be super-heated it would condense less rapidly. This may be accomplished by keeping the vaporizer immersed in water whose temperature is kept as nearly as possible at a temperature of from 103° to 105° F. If the temperature is raised to 120° or 130°, the ebullition becomes so active as to drive over the fluid ether in considerable quantity.

A very simple and ingenious apparatus, by means of which the desired results may be secured (contrived by Dr. O. C. Ludlow), is thus described: Two glass phials of a capacity of from six to eight ounces. One phial, intended as the reservoir for containing a supply of ether sufficient in quantity to last throughout the entire operation, should be marked with graduate lines, so that the amount used may be accurately measured. This is connected with the second phial, intended to be used as the vaporizer, by a rubber tube with a forcing bulb, as in Davidson's syringe. Phial No. 2 is placed in a jar of water with a thermometer, so that the water may be kept at the required temperature. To a curved glass tube, projecting through the stopper of phial No. 2, is attached a rubber tube about two feet long, on the distal end of which is a rubber nozzle for introducing well into the rectum. Into this rubber tube, about eight inches from the nozzle, is inserted a short glass tube, from which the apparatus can be easily detached when the vapor is not needed; the glass also enables one to discover when fluid ether is being driven through it. Through the cork stopper of phial No. 2 a second glass tube is passed, which tube receives the rubber from phial No. 1, through which ether is fed, as required, from the reservoir. When a sufficient

quantity of vaporized ether has passed into the rectum, the tube is slipped off from its glass attachment near the anus and left *in situ*. The connection can be readily re-established when more vapor is needed. This tube left in the rectum has also the advantage of affording a ready escape for any excess of ether vapor which may have been driven on, or for gases generated in the bowels. Dr. Peters stated that the results of ether thus administered in two operations, performed upon a single patient, were eminently satisfactory. The patient was profoundly anesthetised, and the anesthesia continued for some time, but he came out from under the influence of ether with less subsequent annoyance than usually followed the administration of this anæsthetic. He thought the method worthy of further trial.

In the discussion that followed, Dr. Sands said that he had had the privilege of witnessing the operation described in the paper, and, being only a spectator, he was perhaps able to observe the effect of the anæsthetic better than those who were engaged in performing the operation. It had seemed to him that the ether was but little under the control of the administrator, and that, in spite of the precautions used, a very large accumulation took place in the intestine, with the effect of producing cyanosis and very deep anesthesia for a period which made a bystander feel anxious with regard to the result. He would hesitate, from what he had observed in this case, to adopt this method as a substitute for inhalation in the ordinary way, even in operations of the kind mentioned.

Dr. Buif had had considerable experience with etherization by the rectum, the results of which he had already published. He had administered ether in this manner in seventeen cases, and had reached the conclusion that the method should not be practiced, because in a large proportion of those cases the reaction which followed on the part of the intestinal tract was very considerable. In some cases there was diarrhoea with bloody passages, and in others ordinary serous diarrhoea, and the diarrhoeal discharges seemed to occur without very much reference to the apparent good general condition of the patient. In one case the diarrhoea continued for two or three days after the operation. Judging from his own experience, he was unable to call etherization by the rectum a safe procedure, and this conclusion had been confirmed by the occurrence of deaths from ether administered in this way in different hospitals, and where there was nothing in the nature of the operation which would have imperiled the life of the patient.

VII. DIMETHYL ACETAL AS AN ANÆSTHETIC. By Dr. F. FISCHER (Strassburg). A mixture of dimethyl acetale and chloroform (in the volumetric proportion of two to one) having been recommended for anesthesia by von Mering, it was tried in a number of cases at the Strassburg surgical clinic in the winter of 1882, the results of which are published by the author.

The compound in question, represented by the formula  $C_4H_{10}O_2$ , and of 0.87 spec. grav., has its boiling point at  $64^\circ C.$ , and is therefore better adapted to be mixed with chloroform (the boiling point of which is  $62^\circ C.$ ) than is ether, which, owing to its much lower boiling point at  $35^\circ$ , and consequently to its earlier evapo-

ration, is not suitable for mixing with chloroform. Its action on the heart is not depressing, as are all combinations of chlorine, including chloroform, bichloride of methylene, chloral hydrate; it acts principally upon the respiration.

Having verified these effects upon animals (frogs' heart-beats sank from 90, under the influence of chloroform to 72, under dimethyl acetate to 90, and under the mixture to 90, and the arterial blood-pressure sank under the mixture, inhaled, from 116 mm. Hg. only to 104; while an intravenous injection of dimethyl acetate caused it to sink from 123 to 97 mm. Hg.), 150 patients were narcotised with the mixture, Eschscholtz's modification of Skinner's inhaler most generally being used.

All the narcoses were highly successful.

At first, frequent respiration and excitement obtained. The pulse, however, remained throughout full, hard and regular. In the course of narcosis, the breathing became gradually slower, and never once entirely ceased. No irritation of the mucous membranes appeared; no salivation, coughing, or lacrymal secretion was observed. The pupils were large at first, a slight perspiration broke out just before anaesthesia was complete. No excessive psychical action was noticed, the patients gradually sank into a peaceful sleep. At no time during narcosis was vomiting or nausea observed; the patients were allowed a little milk on the day of operation. The awakening out of narcosis was very rapid, no headache was present, and the general state of feeling was good. Only four times vomiting occurred after narcosis, but these were such cases as had large quantities of liquids given them on account of great loss of blood during the operation. No gastric irritation or incessant vomiting followed. The time necessary to perfect narcosis in robust males was fifteen minutes, and much less in children or anæmic individuals. The mixture does not irritate the skin, and no albumen or sugar is to be traced in the urine.

After giving the cases, tabulated and detailed, the author disapproves of the use of pure dimethyl acetate, as it takes too long a time to produce anaesthesia, and as it is expensive, but recommends the use of von Mering's mixture in all cases suffering from gastric catarrh and excessive vomiting after other anaesthetics; in cases of laparotomy; in cases of heart disease or nephritis; in cases of disease of the central nervous system, epilepsy, or paralysis infantum, and in cases where administration of chloroform causes alarming symptoms, and where narcosis must be continued to the end of the operation.—*Deutsch. Zeitsch. f. Chirurg.* Bd. 21. Hft. V. and VI. 1885.

W. VAN ARSDALE (New York).

## Operative Surgery.

I. ON PLASTIC OPERATIONS BY FRESH PEDICULATED FLAPS FROM DISTANT PARTS OF THE BODY. By Prof. H. MAAS (Würzburg). The object which M. aims at is the successful treatment of obstinate ulcers, ulcerating cicatrices, etc. He first cites three published cases where flaps were transplanted after first allowing them to granulate (Thiersch's method). He then quotes the more or less successful at-

tempts with fresh flaps; which, however, have not been considered very encouraging.

Many of his were cases of otherwise incurable ulcers in the vicinity of joints. He describes and illustrates five, all giving good results, besides mentioning a series of other less difficult ones, especially tubercular sores and fistulæ. In these minor cases he cuts his flap so as to leave a zone of healthy skin between its original and secondary positions.

From his experience, this operation succeeds if the following rules are observed:

1. The part from which the flap is to be taken should be immobilized, for which purpose plaster Paris works best. Determine by repeated trials the most tolerable position for the parts while in duration. The lower extremities may be extended, or flexed at knee and hip, with the patient on the side. Each limb should be plastered separately, and then united by a third plaster dressing. Similarly, in operating on arm, bind it firmly to thorax.

2. In making a fresh wound of the ulcer or defect to be cured, special pains are to be taken to first pare off the superficial soft layer of granulations, which is traversed by numerous perpendicular vessels. Only the deep layer of moderately firm connective tissue and horizontally arranged vessels should be left. This accords with Thiersch's rule in making Reverdin's transplantations; in fact, M. takes Thiersch's investigations as the basis of his method.

3. The flaps must be cut as much as possible in the direction of the vessels, even though this necessitates more twisting of the flap-pedicle. Whether we should first apply the plaster or prepare the flaps depends upon the position of the parts.

4. The flap must be sutured as exactly as possible in its new position, and buried sutures or pressure applied. It is very necessary to protect the free raw portion of the flap and the fresh wound from drying, and consequent necrosis. M. uses boracic ointment, spread thick on gauze. Strict antiseptics, of course, with dressing which likewise protects from harm.

5. Pedicle may be severed from the tenth to the fourteenth day, and this done completely at one stroke, and not piecemeal. In one case where it was cut on the seventh day the flap was preserved, though the epithelium at first exfoliated.

The flap very soon regains its sensibility, and takes on the character of the surrounding skin, even when transplanted to the heel; underlying joints become movable, etc.—*Arch. f. klin. Chirg.* 1884. Bd. 31. Hft. iii.

W. BROWNING (Brooklyn).

## Head and Neck.

- I. EXTRACTION OF A PISTOL BALL FROM THE BRAIN THROUGH A COUNTER-OPENING IN THE SKULL. By W. F. FLUHRER, M.D. (New York). The patient, a healthy man, aged nineteen years, shot himself with a pistol held in contact with his forehead. About twelve hours afterwards, when seen by the surgeon, he was semi-unconscious, aphasic, with complete loss of motion without loss of sensation on the

right side below the head. Left side hyperæsthetic. Pupils equally dilated. Pulse, 100; temperature, 101.4° F. Patient was etherized, and, under the protection of copious irrigations of corros. subl. sol. 1-1000, the wound of entrance (nearly in the centre of the forehead) was enlarged, including also the wound in the skull. This procedure was complicated by hæmorrhage from a branch of the anterior cerebral artery, which was finally controlled by a small compression forceps left *in situ*. The track of the ball through the brain was then probed by a bulb-pointed copper probe, and the point on the scalp noted at which the probe would emerge if projected through the head. At this point the cranium was exposed and trephined. The trephine hole was enlarged with a *rongeur* toward the assumed opening of emergence of the bullet; the dura mater was slit in the same direction. Some effused blood and disintegrated brain matter appearing, more of the skull was cut away, and the slit in the dura mater prolonged, until a gush of brain matter, and a rent in the pia mater, demonstrated the point of impact of the bullet. The probe was introduced through the opening in the pia and passed downwards toward a point where a feeling of resistance had previously been felt with the tip of the finger applied on the surface. At a distance of an inch the bullet was detected, and then extracted with a slender-bladed forceps. It weighed 42 grains. A small-sized rubber drainage tube was then introduced along the track of the ball through the brain, and the projecting ends cut off to within an inch and a half of the skull. Iodoform dressings, with an external protective layer of borated cotton, were applied. The after history of the case was one of gradual but progressive amendment. On the sixth day the drainage tube was withdrawn, and replaced by a drain composed of four strands of catgut and ten of horsehair. On the eighth day the compression forceps was found to be loose, and was removed. On the tenth day a cystitis had developed, which caused much annoyance for several days. On the thirteenth day the strands of catgut had become absorbed, and four strands of horsehair were withdrawn. Considerable cerebral irritation followed this proceeding, and, it seeming that the presence of the remaining hairs was exciting further disturbance, they were all withdrawn on the fifteenth day. An hernia cerebri had developed at both cranial openings. On the twenty-fifth day the patient was entirely free from pain, and his temperature, respiration, and pulse were all normal. After the thirtieth day the hernie cerebri, which up to this time had been simply protected from irritation, were subjected to slight continuous pressure. They gradually shrunk, and by the end of three weeks more had disappeared. By the end of the second month after the operation the posterior wound was completely cicatrized. Three weeks later the anterior wound also was healed, and the tissues at the openings in the skull were slightly depressed below the level of the surrounding scalp. After leaving the hospital the patient returned to work, a slight impairment of memory being the only apparent consequence of his wound. He follows the same occupation, and performs the same duties in it as before he was shot. A severe blow accidentally made upon the anterior scar some months after returning to work determined a violent convul-

sive attack, which recurred at the end of three weeks. Bromides were freely given, and no further recurrence had taken place when the report was made, six months later.—*New York Med. Journ.* 1885. March 28.

11. REMARKS ON DEATH FOLLOWING ENUCLEATION OF THE EYEBALL. By A. HILL GRIFFITH, M. D. This article, which was read in the section of ophthalmology at the meeting of the British Medical Association at Belfast, describes two cases of death after enucleation in the wards of the Manchester Royal Eye Hospital. The first was that of a man, aged 71, suffering from rodent ulcer of both lids of the right eye, the globe itself having atrophied. The treatment was commenced by the enucleation of the globe. The operation was performed in usual way without presenting anything unusual, and the man died in six days from symptoms of meningitis. After death a quantity of purulent exudation was found covering the whole of the upper surface of the right hemisphere of the brain. The orbit was normal, and no connection could be traced between the pus on the surface of the brain and either the orbit or temporal bone. The brain itself was perfectly healthy. The second case was that of a woman, aged 48, whose right eye in a condition of panophthalmitis was excised in consequence of the severe pain to which it gave rise. She died, without rallying from the operation, on the eighth day. At the post-mortem an effusion of thick, tenacious adherent lymph was found over the greater part of the convexity of the right cerebral hemisphere. In the region of the sphenoidal fissure and of the optic nerve no evidence of inflammatory effusion was observed. The brain substance was healthy. The right orbit was opened and the stump of the eye examined, but no marked changes were observed. The sheath of the optic nerve seemed somewhat hyperemic. On inquiry into the literature of the subject the author has been able to find the records of six cases of death from meningitis after excision of the eyeball, and on analyzing these cases the important fact becomes evident that in four of them the enucleated eye was in a condition of panophthalmitis. He believes that although there was no post-mortem proof of the connection between the meningitis and removal of the eye in five of the cases referred to in which an autopsy had been made, still there is clinical evidence sufficient to show that the development of the head symptoms after the operation was something more than a mere coincidence, especially in the panophthalmic cases. The theory that panophthalmitis can of itself cause meningitis is not applicable to the above quoted cases, because when death results from meningitis after cellulitis of the orbit, there is a direct connection easily traced by the naked eye between the orbit and the meningeal affection.

He concludes by remarking that in the face of these facts he would not feel justified in enucleating a case of panophthalmitis except under one condition, namely, in impending sympathetic affection of the other eye.—*Brit. Med. Journ.* 1884. Dec. 27.

111. ON THE TREATMENT OF DETACHMENT OF THE RETINA. By J. R. WOLFE, M. D. The author in this communication, which was addressed to the Academy of Medicine of Paris, discusses the method of treating detachment of the retina, which he has followed since the year 1878. The principle of the treatment which he advo-

operation is based upon the opinion that the effusion in these cases should be treated in the same manner as other effusions in serous cavities, as for example in the pleura or in the peritoneum. He consequently withdraws the effused fluid by a sub-conjunctival sclerotomy, practised in the meridional direction. The following are the steps of the operation in cases where vision is nearly or entirely abolished, and the retina is largely detached: The patient is first examined by the erect ophthalmoscopic image in order to ascertain the site of the detachment, and also to which side the effused fluid inclines. In order to render this examination complete the patient's head must be placed in various positions. Thus with the patient sitting upright, and then also with the head placed in a horizontal position, he is made to look upwards and downwards, to the right and to the left. The side to which the fluid inclines in the different positions of the eyeball having been thus ascertained, chloroform is administered to the patient and the ophthalmostat introduced. A vertical incision is then made into the conjunctiva half an inch long in the region of the detachment. The lips of the wound are separated by an assistant in a horizontal direction by means of two strabismus hooks. The capsule of Tenon is then opened, the sclerotic laid bare, and by rotation of the eyeball the corresponding part of the sclerotic exposed, towards which the fluid inclines, into that part a broad needle is introduced, having an external flat surface and an internal convex surface. The needle is gently withdrawn without the slightest inclination, and the liquid flows on the withdrawal of the instrument. The instrument is introduced obliquely, in such a manner that the edges of the scleral wound should overlap each other, and not remain gaping when it is withdrawn. The lips of the conjunctival wound are brought together with one or two fine silk ligatures, and both eyes are shut by three strips of court plaster lint and a bandage. The patient is required to lie upon his back for two or three days, as after the extraction of cataract. On the third or fourth day the simple dressing is renewed without opening the eyes, but on the fifth day the eyes are opened and the results of the operation ascertained. By this time there is generally not the slightest trace of an operation left. Of seven cases which have been recorded from the author's clinique, three have resulted in perfect success, where the method here described has been followed. The state of total blindness in each has been cured, so that the patients could return to their ordinary occupations. In each of the four other cases the success was partial. There is a full description of a case upon which the author operated in the Ophthalmic Hospital at Paris, the result being most satisfactory. The points of distinction between scleral puncture as proposed by Gräfe, and the operation as practiced by the author, are clearly given, and in the latter case the necessity of the ophthalmoscopic examination of the eye in various positions, and the importance of the liberating of the eyeball from its envelope, so as to render visible and bring into proper position the part behind the equator towards which the fluid inclines, insisted upon.—*Brit. Med. Journ.* 1884. Dec. 20.

H. PERCY DUNN (London).

IV. RESULTS OF OPERATIVE TREATMENT IN TWO CASES OF TRIGEMINAL NEURALGIA. By J. C. HUTCHISON, M. D. (Brooklyn). CASE I. *Neuralgia of third division of fifth nerve:*

1. Removal of the right upper molar tooth was followed by relief from pain for three weeks, although there had been no pain in the course of the superior maxillary nerve at any time.
2. Removal of the alveolar processes of the lower jaw gave complete relief for more than five months, but how much longer I cannot state.
3. Excision of the inferior maxillary nerve relieved the pain for three years.
4. Ligature of the left common carotid resulted in relief from the neuralgia for three years and eight months. No cerebral symptoms followed the operation, and none have appeared after the lapse of nearly four years.

CASE II. *Neuralgia of first and second divisions of fifth nerve:*

1. Incision of the scalp with no benefit.
2. Excision of the branches of the supra-orbital nerve near the supra-orbital notch, and at the same time incision of the infra-orbital filaments of the superior maxillary nerve near the infra-orbital foramen, relieved the neuralgia for six months.
3. Removal of half an inch of the superior maxillary nerve from the infra-orbital canal was followed by freedom from pain for an unknown period of time.
4. Excision of the superior maxillary nerve in the infra-orbital canal was repeated ten years after the last operation, but the neuralgia returned so soon as the incisions had healed.
5. Ligature of the right common carotid twelve years after the last operation. There was no relief from pain, and no cerebral symptoms followed the operation.
6. Removal of the superior maxillary nerve from the infra-orbital canal a third time, a little more than ten years since it was last removed. During the two months and a half after the operation that he was under observation he was free from pain, but then began to complain of neuralgia in the inferior maxillary nerve. I then lost sight of him.

The operation of tying the common carotid artery for trigeminal neuralgia, which was first recommended and practiced by Nussbaum and Patriban, has been practiced by other surgeons with a fair amount of success. The author thinks this operation to be worthy of further trial in severe cases which have resisted all other treatment. —*Proceedings of New York Surgical Society.* 1885. March 24.

V. STRETCHING THE FACIAL NERVE. By DR. C. KAUFMANN (Zürich). This nerve was first stretched by Baum, Jr., in 1878. Bernhardt (1881) found that in no case of convulsive tic had a cure been thus effected; ditto Nocht in 1882.

Kaufmann adds another failure. The trouble dated back seven years; five days after the operation it was as bad as ever.

In the earlier operations the facial was taken at the stylo-mastoid foramen, the cut being made along the front edge of the sterno-mastoid muscle. To simplify matters Hueter cut down just at the posterior edge of the jaw through the skin, fascia and

parotid, and followed back the lower half of the facial. K. says that in this way it is difficult to follow the nerve farther back than to the external carotid, or at most 2-3 mm. beyond. In operating according to Hueter's method, Kaufmann found that in some way the rami zygomatici were not included in what appeared to be the nerve trunk; this led him to study its variations. Very frequently there is one main trunk which rapidly divides into branches (see atlas of Heitzmann); often again the trunk is very short, with one pronounced upper branch, the lower immediately splitting into several (*Henle's Anatomy*). K. believes his case to have been a counter part to the following dissection: 4 mm. from the stylo-mastoid foramen a large branch passed upwards, at a right angle from the facial trunk, and shortly separated into the temporo-frontal and zygomatic twigs. The buccal twigs as a second branch separated off over the external carotid. He proposes as the only sure way of securing the whole facial to first expose the lowest branch, *nerv. subcut. colli sup.*, then make an oblique incision along the course of this branch through skin and parotid—somewhat bloody, but safe—and thus gain the main trunk.—*Centbl. f. Chirg.* 1885. Jan 17. No. 3.

VI. ON THE MORPHOLOGICAL SIGNIFICANCE OF CLEFTS OF THE JAW, LIPS AND FACE. By PROF. P. ALBRECHT (Brussels). This article is a further exposition of views first put forth by Albrecht in 1879, and which he proposes soon to elaborate into a monograph.

Fig. (1). *Fissures of the Jaw:*

Gæthe considered that these fissures passed between his intermaxillary or incisor bone and the superior maxilla. His explanation has always been accepted, unless perhaps his further assumption that such was only the case in double cleft, while in single it passed mesially between the two incisor bones. Albrecht believes that instead of their being but one intermaxillary on each side there are two, and that the occasional fissure invariably passes *between these two*. In men this bone is much less developed than in the animals below him. Consequently to study it to any advantage it is necessary to make an excursion in comparative anatomy. A. points out that the relatively slight use of the incisors by man is clearly the reason why in him this bone is so little developed and unites so early with the upper maxilla. In the horse it is well developed; it has a body and two processes, the palatal and the nasal, the latter separating the superior maxilla entirely from the apertura pyriformis. In the winter of 1878-9 A. first succeeded in demonstrating four incisor bones in the head of a new-foaled colt affected with hare lip and cleft palate. Here the nasal process was separated from the rest of the intermaxillary by the fissure; the process passed up beside the apertura pyriformis just as in the usual form. While normally the horse has two incisors on each side, here there were three (hyperodontia), two in the body (*corpus os. intermax.*) and one in the nasal process. He has since seen a large number of such cases, and in each the fissure was likewise *intra-incisive*, in no one did it coincide with the suture incisiva. The two inner intermaxillaries are united at

the median symphysis, while each external one, represented by the nasal process mentioned above, is joined to the respective nasal and superior maxillary bones.

He next examined like malformations in calves, and arrived at the same result as from the horse.

In men, if the old theory were correct that the fissure occupied the suture incisiva, there should be three milk teeth external to the fissure and two between it and the median line. He takes the illustrations in well-known German works as the best evidence that such is not the case; in them there are four milk teeth external to the cleft, and but one internal, and this in single as well as double cleft. In all accessible atlases and illustrations he finds the same—four outside and one, or sometimes two, inside. The lateral incisor being thus separated off from the median, he proposes to call it the præcanine tooth. The same arrangement is of course also found in the adult cleft palate. He further finds, at least in some cases well marked, a co-existing suture incisiva between the lateral incisor and the canine tooth. Further, according to Goethe's theory the cleft could never run into the pyriform aperture—in reality, however, it always does. With regard to the extra incisor seen in equine cleft palate and occasionally in the human, he finds that it sometimes appears in normal human sets of teeth even in the lower jaw; that it is really the middle one of the three; that it represents a lost tooth which is usually crowded out, but that in cleft palate the naso-palatine artery, being cut off from its anastomoses, has a much smaller territory to supply, and thus tends to develop the usually abortive germ, and also to an unusual degree the vomer and inner intermaxillary, thus making them so prominent. He gives also a schematic classification of these various arrangements of the teeth, of the adjacent bony processes and fissures, their development, etc.

## 2. Labial Fissures:

His classification of these is derived from his previous conclusions and the development of the face. He makes out eight lips: two internal interlabia, corresponding to the two internal intermaxillaries; two external interlabia, corresponding to the two external intermaxillaries; two supra labia, corresponding to the upper maxillæ, and two infra labia, corresponding to the two lower maxillæ. Accordingly we have the following labial fissures, which A. represents graphically by broken lines: 1. Median fissure of the upper lip, repeatedly seen in man. 2. Harelip, between interlabium internum and same externum. Since it runs towards or into the nostril it is a labio-narine fissure. 3. Colobom of the upper lip, between interlabium externum and supralabium. It does not run into but outside the nostril, and is therefore not to be confounded with the preceding. 4. Harelip complicated with colobom. He was able to show the double form of this complication on a puppy's head. 5. Macrostomic labial fissure, between upper and lower lip, a lesser degree of what is called macrostomy. 6. Median fissure of the lower lip. Cases also occur showing various combinations of these.

## 3. Facial Fissures:

He considers these to be rather cheek or buccal than facial fissures. They separate

the cutaneous resp. mucous derivatives of the nasal and maxillary processes, as did likewise the labial fissures, yet occurring sometimes independent of the latter. He makes eight cheeks (buccæ) corresponding to the eight lips, two interbuccæ internal and two external, two supra and two infrabuccæ. Theoretically there would be eight buccal fissures: 1 and 8, median above and below are unknown; 2 and 3, between interbucca interna and externa, when harelip extends up so as to split the nasal wing (fissura alaris), of which he had an example; 4 and 5, between interbucca externa and suprabucca. An extension of colobom of the lip; the two together form what is called a labio-palpebral fissure; when the former exists alone it is called a colobom of the lid; 6 and 7, between suprabucca and infrabucca, macrostomic buccal fissure, commonly called macrostomy.—*Arch. f. klin. Chirurg.* Bd. 31. Hft. II. 1884.

VII. SO-CALLED CONGENITAL CAPUT OUSTIPUM AND THE OPEN SECTION OF THE STERNO-MASTOID MUSCLE. By R. VOLKMAN (Halle). This includes a semi-critique of a recent article by Petersen. He agrees with P. that the etiology is not satisfactorily established, but differs from him in thinking that rupture of the muscle may have some causal action. He finds, on a basis of twelve cases, two classes, in one of which there are no changes of the muscle; in the other it is cicatrized, or almost wanting. Of course there are many intermediary forms. Malposition in utero cannot be a cause, though traumatic disturbance at birth may be, especially severe straining or rupture of the upper vertebra and their ligaments. Treatment by open section of muscle and extension for a few days gave uniformly good results.—*Centbl. f. Chirg.* 1885. April 4. No. 14.

VIII. SUBHYOID PHARYNGOTOMY. By Dr. A. IVERSEN (Copenhagen). Iversen could find but eighteen cases thus operated,—six of his own, three of Prof. Studsgaard's, and nine in the literature. Tumors, arising from pharynx, are the usual indication, though Steffert thus removed a foreign body, and Iversen a cicatricial stricture of superior end of œsophagus. I. could collect but twenty-four cases of primary pharynx-tumors, reported in the last twenty-five years. Of his six cases, one died three days after operation; the others either recovered entirely, or died later of relapses.—*Arch. f. klin. Chirg.* 1884. Bd. 31. Hft. III.

IX. STATISTICAL CONTRIBUTIONS ON THE OPERATIVE TREATMENT OF CARIES FROM OTITIS MEDIA. By Dr. SCHÖNDORFF (Greifswald). Amongst other cases and discussions, one where the otitis led to abscess formation between dura and skull, near the lambda suture, after it had been opened up thoroughly, and under drainage; patient recovered. Another, of subperiosteal abscess in the temporal region.

In sixty skulls, from adults, he found traces of the fissura squamoso-mastoidæ in sixteen, but in two only could a brisile be passed into the mastoid cells.—*Archiv. klin. Chirurg.* Bd. 31. Hft. II. 1884.

X. CONTRIBUTION TO THE STATISTICS OF TRACHEOTOMY. By Dr. H. BIRNBAUM (Darmstadt). Other methods of treating croup and diphtheria are first con-

sidered in some detail. Then follow the method of operating, and various tables according to age, season, sex, complications, etc. Of 140 operations in eleven years—1873-1883—forty-seven resulted in cure, or one-third. Of three under one year, one was cured. Most of the patients were under six years. Monti (1884) collected 12,736 cases, with 3,409 cures.—*Archiv. für klinische Chirurgie*. Bd. 31. Hft. II. 1884.  
W. BROWNING (Brooklyn).

XI. AFTER-TREATMENT IN TRACHEOTOMY FOR DIPHTHERITIC CROUP. By Dr. G. PASSAVANT (Frankfort). During the course of the after-treatment in cases of tracheotomy, conditions may obtain which prevent the definite removal of the canula. These may be either purely mechanical in character, or may be due to other specific forces.

To the first class belong: (1) inturned cartilages, retained in position by inflammatory products, as obstructing respiration whenever the canula is removed, especially when they are combined with granulation-formations. (2) A tendency on the part of the trachea to collapse on removal of the canula, owing to the incision having been made of too great a length. (3) Tumors and other complications of the disease; these are, however, not considered at length, as not belonging to the subject of diphtheria. To the second class belong: (4) Paralysis of the posterior crico-arytenoid muscle, which of itself forms one of the indications for tracheotomy, and therefore may necessitate continued use of the canula; it may be diphtheritic in nature, or be caused by pressure on the recurrent branches. (5) Spasm of the vocal cords—a condition as yet not sufficiently observed, and questionable in its occurrence—such spasms differing from a contracted state of the antagonists in cases of paralysis, in that the action of the muscles is abnormal, but normal in the latter case. (6) Loss of ability to breathe without a canula, resulting from a long continued use of the instrument and mere want of practice. (7) A psychical condition of anxiety, which may prove an obstacle to the removal of the canula by the child becoming excited and losing its breath, whenever such a removal is attempted.

The author illustrates some of these conditions by detailed histories of cases, one of which had to retain the canula for a period of eight years, the muscle crico-arytenoid, postic, refusing to act during sleep, probably as a consequence of habit; and one, belonging to the last enumerated condition, occurring in a child 7 years of age, where the removal could only be effected by stratagem.

Repeated performance of tracheotomy in the same subject often becomes necessary, the operation having had occasionally to be twice repeated in the experience of the author.

It is sometimes difficult to close the fistula remaining after the removal of the canula; in one case of the author's, repeated operations failed to obtain a satisfactory result. A histological inquiry into the manner in which divided cartilages unite, conducted by Dr. Max Flesch, of Berne, resulted in showing that the cartilage did not coalesce, but that a union was effected by connective tissue, a thin layer of car-

tilage cells only being formed approximate to the cartilages, the thyroid gland being drawn close to the trachea, or even into the incision.

In conclusion, the author turns his attention to the statistical reports on diphtheria, and points out how statistics in general are influenced by the considerations: whether the cases operated were true diphtheria, or only croup; whether the operation was performed in an early or in a late phase of the disease; whether the operator performed tracheotomy without predilection on cases of all ages, or whether those under two years were excluded; whether the cases received good after-treatment or not; whether the place of operation was far removed from or in easy reach of the surgeon, as in a hospital; whether the operator himself was skilled and experienced or not. After mentioning the statistical tables already published, from Trousseau to Jacobi, the author proceeds to enumerate the majority of cases of tracheotomy performed in Frankfort on the Main, embracing a period from 1851 to 1882, being in all 229 cases, 67 of which recovered, or one in four, and the greater part of which were performed by Passavant himself.—*Deutsche Zeitsch. f. Chirurg* 1884. Bd. XXI. Hft. 4.

W. VAN ARSDALE (New York).

XII. SIMULTANEOUS DOUBLE DISTAL LIGATURE OF THE CAROTID AND SUBCLAVIAN ARTERIES, FOR HIGH INNOMINATE ANEURISM. By RICHARD BARWELL (London). The patient was a woman, aged 48. The right half of the sternum, the two upper costal cartilages with their interspaces were pulsatile. In the outer half of the episternal notch, and behind the inner head of the right sternomastoid muscle, was a pulsatile tumor which involved the carotid artery. The voice was low and toneless. The right radial pulse was very small, and four days after her admission ceased, when no pulse could be felt throughout the arm nor at the third part of the subclavian artery. The carotid was tied, and as the immediate effect was increased pulsation of the sac, the third part of the subclavian was ligatured lest the obstruction should yield and the aneurism again increase outwards. Ultimately consolidation followed, and she left hospital on May 6, the operation having been done on February 28. On June 4 there was no enlargement at upper part of chest, no cervical tumor, and over the site of the aneurism the percussion note was clear, and the respiratory murmur distinct. This is the sixth case of the kind Mr. Barwell has brought before the Medico-Chirurgical Society. In the discussion which followed, Mr. Holmes dissented from the practice of simultaneous ligature in these cases. He considered the ox-aorta ligature very much better than catgut prepared in any way.—*Lancet*. 1885. Jan. 31.

WM. THOMSON (Dublin).